

Lower Passaic River Study Area High Volume Chemical Water Column Monitoring QAPP Revision 1 (09/2012)

Response to EPA Comments

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PREPARED AT REQUEST OF COUNSEL- PRELIMINARY DRAFT
FOR DISCUSSION PURPOSES ONLY

No.	Section/ Worksheet No.	Comment	Response
1	Comment 8	The language suggested in the RTC should be replaced with the following: "Partitioning data developed as part of the CARP program include only a limited number of samples in the Lower Passaic River and Newark Bay (especially for dioxins and furans) and the partition coefficients derived from these data are characterized by substantial variability in both space and time. Additional data are needed to increase the confidence in site specific partition coefficients and determine if they vary spatially."	The language suggested by EPA will be added to the QAPP Introduction.
2	Comment 28	It would be helpful if the same information were added to page 3 of 5 on Worksheet 12.	In response to EPA's original comment, an explanatory footnote was added to pages 4 (PCBs) and 9 (PCDDs/Fs) of Worksheet #12 ("PUF is treated as a solid matrix from the perspective of the laboratory's analytical methods. The PUF data are used to estimate dissolved concentrations in the water column"); no additional changes to Worksheet #12 are needed. However, for clarity, footnotes will also be added to Worksheet #28.
3	Comment 31	Additional detail should be provided regarding the preparation of the solid phase PE sample (for example, will the PE sample be prepared with a filter media and the coagulant?). In addition, Comment 31a requested that Worksheets 31 and 32 clarify that PE samples were only being analyzed for the solid phase portion of the sample. The requested addition was not incorporated	The filter media and hydromatrix will be added to the PE sample preparation; this information will be included in Worksheet #32. Worksheets #31 and 32 currently state that PE samples will be submitted in conjunction with the separated solids samples; these worksheets will be revised to definitely state that PE samples will only be analyzed for the solid phase of the samples.
4	Comment 36	This comment has not been addressed on Worksheet 12 (the addition of the QC standard to the PCB analytical tables).	The QC standard will be added to Worksheet #12 for the PCB analyses of the filter media and solids. Footnotes defining the QC standards for PCBs and PCDDs/Fs will be added to Worksheet #12 per EPA's

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			request. For consistency, the above information will also be added to Worksheet #28.
5	Comment 41	The phrase "Measurement Performance Criteria" was not added to the DQI column for the Method Blank in the PCDDs/Fs portions of Worksheet 12, as requested.	EPA's original comment indicates that "Accuracy/Bias Contamination" is not the appropriate DQI for all the Measurement Performance Criteria listed under the PCDD/F PUF method blank. Worksheet #12 will be revised to include the appropriate DQI (for example, sensitivity) for each element of the Measurement Performance Criteria identified in items a-e. Adding the phrase "Measurement Performance Criteria" to the DQI column, as requested in this comment, does not appear to address EPA's original comment, and would be inconsistent with the remainder of the Worksheet #12.
6	Comment 42	It doesn't appear that clarifying language regarding the use of the EDLs was added, although the exception for 2,3,7,8-TCDD was removed.	Per EPA's request, Worksheet #12 will be revised to include a footnote with some of the clarifying language included in the original RTC. Worksheet #28 will be revised for consistency with Worksheet #12.
7	Comment 45	This was changed to glass wool throughout, no 25 um cellulose will be used.	Agreed. The CPG's response to comment #45 indicated that glass wool will be used throughout. No changes to the QAPP are necessary.
8	Comment 66	Worksheet 28 hasn't been completely updated to be consistent with the changes to Worksheet 12. For example, in Worksheet 28, on Page 6 of 19, the static spike recovery criterion for the PCB PUF sample is still listed as 50-150% rather than 75-125% as revised in Worksheet 12 according to EPA comment 39 and the CPG's response. Worksheet 28 should be fully reviewed for consistency with the comments on Worksheet 12.	Worksheet #28 will be updated to be consistent with Worksheet #12.

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9	Comment 87	SOP LPR-FI-04 still includes comments such as "This SOP....is restricted to standard or "small volume" sample collection" (see last sentence of Section 1.1.) The SOP text needs to be updated better to reflect large volume sampling and avoid confusion. The revised wording is handled a bit better for SOP FI-06, which states that "this SOP is restricted to small volume sampling of metals. The clean hands techniques in this SOP are also applicable to high volume (HV) sampling of hydrophobic organic compounds per SOP SW-19."	SOP LPR-FI-04 will be updated to be more consistent with the application to HV sampling, as was done in SOP LPR-FI-06.
10	Comment on the revised analytical SOP for the PUF and filter preparation	Step 4 under the "High Volume Sampling Specific Additions to SOP", page 5 of 5 of the Addendum, seems to be out of place. Please review the sample preparation procedure and revise or clarify this step, because it is the same step as number 2 above.	A revised version of the SOP Addendum will be provided that clarifies the PUF and solids steps separately and sequentially.
11	Comment 13a	In addition to preparing and referencing a Technical Memorandum on partition coefficient development, text should be added to the QAPP to describe that the partition coefficients will be site-specific, and operationally defined by the 0.7 um filter and potential limitations of the PUF cartridge with respect to the capture of colloid-phase contaminants.	The assumptions of operationally defined dissolved fraction as 0.7 um filter and the potential limitations of HV sampling, including potential limitations of PUF and XAD with respect to capture of colloid-bound contaminants, will be added to Worksheet #10.
12	Comment 29	Coordination will be required between EPA and the CPG regarding the analysis of the second PUF cartridge in the EPA split samples.	The CPG is analyzing two PUF cartridges per sample, as was discussed during the June 14, 2012 conference call. A split sample, collected by EPA, should also include two PUF cartridges. No changes to the QAPP are required.
13	Comment 58	The use of a PCB/DX spike solution, equilibrated in water, to prepare a PE sample for the dissolved phase portion of the analysis should be evaluated.	The CPG has considered the use of a spike solution, equilibrated in water, for a PE solution and believes such a method is not appropriate. There are several problems, if EPA is proposing equilibrating a water PE for mixed PCB+D/F with PUF. 1) This does not simulate dynamic sampling in the PR2900. AECOM does not know if static equilibrium partitioning will produce the same target capture as dynamic sampling. Using the

			<p>PE results from <i>static</i> equilibrium partitioning for our <i>dynamic</i> sampling method is inappropriate in principle.</p> <p>2) If EPA wants dynamic PE sampling, AECOM does not have a foolproof setup to prepare low level dissolved spikes in high volumes of water and pass them through the PR2900 and PUF. This approach would be fraught technical problems due to the instability of the insoluble D/F and higher mol.wt. PCBs in solution and would require extensive and potentially expensive experimentation.</p> <p>3) No vendor AECOM works with provides a PE with statistical acceptance criteria based on sorbent sampling, either dynamic or equilibrium. The use of acceptance criteria based on separatory funnel or CCLE extraction per the reference methods would be inappropriate. For the solution to work as a PE (programatically), the concentrations need to be verified and analyzed by multiple laboratories to provide a suitable dataset for generation of statistically derived criteria. This precludes preparation of a "special" spike solution or custom mix with meaningful acceptance criteria.</p> <p>4) AECOM is unaware of a vendor that provides a water PE based on extraction of a <i>combined</i> PCB congener + D/F congener mix. The PEs are designed based on many assumptions about the preparation and test methods. If any of those assumptions are wrong, then the acceptance limits of the PE may not be appropriate.</p> <p>5) D/F water PEs from all the vendors used by AECOM provide the spike in toluene, which is not water miscible. Attempting to make a water solution that is <i>truly</i> dissolved using these PEs is therefore not possible. The presence of free phase toluene in the water mix would prevent</p>
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			<p>using it to determine the sorption effectiveness of the PUF for dissolved D/F congeners <i>and</i> prevent combining it with a PCB spike. The PCBs would be released from the miscible acetone and then be “extracted” by the toluene, preventing measurement of dissolved PCB congeners.</p> <p>The CPG requests any information EPA has on successful implementation of a High Volume sampling PE program, that may have been done using Infiltrex and the XAD resin. The CPG is unaware of any study that was done, but would be happy to discuss ways to modify any successful XAD PE study that EPA has completed for use in the PR2900 with the PUF.</p>
14	Comment 90	EPA disagrees with the response to this comment. The QAPP should be modified to designate the field camera as a mandatory and not optional piece of equipment.	<p>Agreed. The CPG interpreted the original comment to read that EPA did not want a camera listed as equipment at all. The camera will be indicated as a mandatory piece of equipment. The SOP will be modified.</p>